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ABSTRACT

Thirty-three deaf college students were tested on ability to read fingerspelled words and letters and computerspelled words and letters, 19 hearing students were tested on the latter task alone, and 12 Ss highly experienced in fingerspelling were tested on the former task alone. On the word task Ss were scored on percent of words correct, with incorrect responses analyzed to determine whether the word was omitted or mistaken. The letter task was scored on number of letters correct and in proper order, and on number correct in any order. Findings showed positive correlations between ability to read fingerspelled and computerspelled words (similar sequential tasks), and between ability to read words and identify letters. Deaf Ss were superior to hearing Ss in identifying words but inferior in identifying letters. For highly experienced Ss performance on a word task was nearly independent of word length. More letters were identified when Ss wrote letters as they were sent rather than waiting unti l all letters were sent. Number of letters reported increased as length of letter group increased, but only if order was not considered. Performance for high imagery words was better than for low imagery words. Performance on both word and letter tasks decreased as length and speed increased. (KW)

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# SEQUENTIAL LETTER & WORD RECOGNITION

by

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EC 041 849

Thirty-three deaf college students at the Rochester Institute of Technology were tested on their ability to read fingerspelled words and letters and computerspelled words and letters. Nineteen hearing students from the same institution were tested on their ability to read computer-spelled words and letters. In addition 12 Ss highly experienced in fingerspelling were tested on their ability to read fingerspelled words and letters. All words used were 4, 6, or 8 letter nouns of predetermined low and high imagery. The letters used in the letter task were the same as those that made up the 4 and 6 letter words, except that they were randomly chosen from the word list and grouped in 4 and 6 letter lengths. For the computerspelled task the stimuli were sent at 300, 150, and 75 msec per letter. For the fingerspelled task the stimuli were sent at 485 and 162 msec per letter. On the word task Ss were scored on the percent words they got correct. The incorrect responses were analyzed to determine whether the word was omitted or mistaken. Two methods of scoring were used on the letter task: the number of letters correct and in their proper order: and the number of letters correct in any order.

A Pearson product moment correlation revealed significant positive correlations between the ability to read fingerspelled words and computerspelled words, and between the ability to read words and identify letters from groups of letters that do not make up words. Partialling out the slight correlations found for vocabulary and speech-reading does not change the significance. A four-way

analysis of variance indicated a significant difference between the deaf and hearing Ss on the word and letter task. The deaf were superior on the word task; the hearing were superior on the letter task. This indicated that each group is processing such sequential information differently and that the tasks themselves are different. For the incorrect responses, both the deaf and hearing made the same number of omissions but the hearing Ss made significantly more mistakes. This suggests that the deaf might be more selective in their guessing. Imagery of a word, length of a word, and the rate at which it is sent are all highly significant. Performance is lower for low imagery words and decreases as word length increases and as speed increases. The effects of length and rate of presentation are similar for the letter task. In addition performance is higher if order is not considered when scoring, and if S is allowed to write as the letters are being sent rather than waiting until all the letters are sent.

The results of this study support these conclusions:

a) Ss who do well on fingerspelling reading do well on a similar sequential task such as computerspelling reading.
b) Ss who do well on identifying words also do well on identifying the letters themselves.
c) Deaf Ss are superior to hearing Ss in identifying words, but inferior in identifying letters.
d) The identification of words is a task different from the identification of individual letters.
e) For highly experienced Ss performance on a word task is nearly independent of word length.
f) In a letter task many more letters can be identified if the S is allowed to write letters as they are sent rather than waiting until all the letters are sent.

g) Reporting letters in proper order is much more difficult than reporting them in any order. The number of letters reported increases as the length of the letter group increases, but only if order is not considered.
h) Performance for high imagery words is better than that for low imagery words at all word lengths and speeds tested.
i) Performance for both the word and letter tasks decreases as length and speed increases.